WALLS
WALLS, PILLARS & PLANTERS

PHYSICAL AND GEOMETRICAL CHARACTERISTICS - DRY-CAST WALL UNITS

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>ASTM C 1372</th>
<th>TECHO-BLOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive strength</td>
<td>3 000 psi [21 MPa] min.</td>
<td>5 050 psi [35 MPa] min.</td>
</tr>
<tr>
<td>Durability to freeze thaw cycles</td>
<td>after 100 cycles</td>
<td>after 100 cycles</td>
</tr>
<tr>
<td>Mass loss</td>
<td>1 % (max.)</td>
<td>1 % (max.)</td>
</tr>
<tr>
<td>Durability to freeze thaw cycles</td>
<td>after 150 cycles</td>
<td>after 150 cycles</td>
</tr>
<tr>
<td>Mass loss</td>
<td>1.5 % (max.)</td>
<td>1.5 % (max.)</td>
</tr>
<tr>
<td>Water absorption</td>
<td>13 lb/ft³ [208 kg/m³] max.</td>
<td>9 lb/ft³ [144 kg/m³] max.</td>
</tr>
<tr>
<td>Dimension tolerance¹</td>
<td>length ± 1/8” [3 mm]</td>
<td>± 1/8” [3 mm]</td>
</tr>
<tr>
<td></td>
<td>width ± 1/8” [3 mm]</td>
<td>± 1/8” [3 mm]</td>
</tr>
<tr>
<td></td>
<td>height ± 1/16” [1.5 mm]</td>
<td>± 1/16” [1.5 mm]</td>
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</tbody>
</table>

Notes: ¹ The dimension tolerance is not applicable to split facings or other architectural finish.

PHYSICAL AND GEOMETRICAL CHARACTERISTICS - STONEDGE COLLECTION WALL UNITS

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Compressive strength¹</td>
<td>30 MPa min.</td>
</tr>
<tr>
<td>Water/cement ratio</td>
<td>0.45 max.</td>
</tr>
<tr>
<td>Air content²</td>
<td>6 to 9%</td>
</tr>
</tbody>
</table>
| Dimension tolerance³ | Height: ± 5 mm (1/4”)
| | Length and width: ± 13 mm (1/2”) |

Notes: ¹ Test method CSA A23.2-9C
² Test method CSA A23.2-4C
³ Dimension tolerance is not applicable to architectural surfaces.
# INSTALLATION GUIDE

## SUMMARY OF CHARACTERISTICS

<table>
<thead>
<tr>
<th>Type of wall</th>
<th>GRAVITY RETAINING WALL</th>
<th>MAXIMUM TOTAL HEIGHT [2,3,4]</th>
<th>MINIMUM WALL RADIUS [5]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle °</td>
<td>Setback mm in</td>
<td>Inclined mm ft # rows</td>
<td>Vertical mm ft # rows</td>
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<td>Borealis</td>
<td>0.0</td>
<td>0°</td>
<td>0.0</td>
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<tr>
<td>Brandon 90 mm [8]</td>
<td>4.4</td>
<td>7.0 3/32&quot;</td>
<td>10 900 2'-11&quot;</td>
</tr>
<tr>
<td>Brandon 180 mm [8]</td>
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<td>14.0 9/16&quot;</td>
<td>5 900 2'-11&quot;</td>
</tr>
<tr>
<td>Graphix</td>
<td>Variable</td>
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<tr>
<td>G Force</td>
<td>3.9</td>
<td>14.0 9/16&quot;</td>
<td>5 1015 3'-4&quot;</td>
</tr>
<tr>
<td>Manchester [9]</td>
<td>0.0</td>
<td>0°</td>
<td>0.0</td>
</tr>
<tr>
<td>Mini-Creta 3&quot; [8]</td>
<td>5.3</td>
<td>7.0 3/32&quot;</td>
<td>12 900 2'-11&quot;</td>
</tr>
<tr>
<td>Mini-Creta 6&quot; [8]</td>
<td>5.3</td>
<td>14.0 9/16&quot;</td>
<td>6 900 2'-11&quot;</td>
</tr>
<tr>
<td>Prescott 2.25&quot; [8]</td>
<td>4.5</td>
<td>4.5 1/64&quot;</td>
<td>16 914 3'</td>
</tr>
<tr>
<td>Prescott 4.5&quot; [8]</td>
<td>4.5</td>
<td>9.0 11/32&quot;</td>
<td>8 914 3'</td>
</tr>
<tr>
<td>Raffinato 90 mm [8]</td>
<td>4.4</td>
<td>7.0 3/32&quot;</td>
<td>10 900 2'-11&quot;</td>
</tr>
<tr>
<td>Raffinato 180 mm [8]</td>
<td>4.4</td>
<td>14.0 9/16&quot;</td>
<td>5 900 2'-11&quot;</td>
</tr>
<tr>
<td>Röcka</td>
<td>0.0</td>
<td>0°</td>
<td>0.0</td>
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<tr>
<td>Semma [8]</td>
<td>7.6</td>
<td>20.0 25/32&quot;</td>
<td>7 1050 3'-5&quot;</td>
</tr>
<tr>
<td>Skyscraper [10,11]</td>
<td>12.7</td>
<td>68.5 21/16&quot;</td>
<td>See note 12</td>
</tr>
<tr>
<td>Suprema</td>
<td>4.5</td>
<td>16.0 5/8&quot;</td>
<td>5 1016 3'-4&quot;</td>
</tr>
<tr>
<td>Travertina Raw [8]</td>
<td>5.2</td>
<td>14.0 9/16&quot;</td>
<td>5 762 2'-6&quot;</td>
</tr>
</tbody>
</table>

[1] Vertical Retaining walls are constructed without any face inclination or setback.
[2] Heights do not include cap thickness.
[3] - Total Height is the vertical distance measured from the top of the footing (aggregate base) to the top of the uppermost course.
   - Exposed Height is the vertical distance measured from the finished grade at the bottom of the wall to the top of the uppermost course. It does not include the wall depth below grade (embedment).
[4] The maximum wall height for gravity retaining walls recommended in this table is based on the following conditions:
   - The retained soil type considered is gravel with an internal friction angle of at least 36°.
   - There is no surcharge load applied on top of the wall.
   - There is no slope on top of the wall.
   - An adequate drainage system is provided at the back of the wall.
[5] Minimum retaining wall radius is measured at the front face of the wall. It corresponds to the lowest course in an internal curve and to the uppermost course in an external curve.
[7] The maximum height does not necessarily correspond to the amount of blocks in a pallet.
[8] Pillar units sold separately.
[9] Freestanding Maximum Height of 750 mm (29 7/8") is based on a block depth of 300 mm (11 13/16").
[10] Skyscraper units provides the possibility of units combination and the use of an extender to build higher walls.
[11] Skyscraper units allows a near vertical (0.8°) wall construction (4.5 mm [3/16"] setback).
[12] Refer to our wall design charts at www.techo-bloc.com or contact our technical service department.
## SUMMARY OF CHARACTERISTICS

<table>
<thead>
<tr>
<th>Type of wall</th>
<th>FREESTANDING WALL</th>
<th>PILLARS</th>
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<tr>
<td></td>
<td>inside</td>
<td>Outside</td>
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<tr>
<td></td>
<td>mm</td>
<td>in</td>
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<tr>
<td>Borealis</td>
<td>612</td>
<td>24”</td>
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<tr>
<td>Brandon 90 mm [8]</td>
<td>750</td>
<td>29 7/16”</td>
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<tr>
<td>Brandon 180 mm [8]</td>
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<td>29 7/16”</td>
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<tr>
<td>Graphix</td>
<td>600</td>
<td>23 1/2”</td>
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<tr>
<td>G Force</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Manchester [9]</td>
<td>750</td>
<td>29 7/16”</td>
</tr>
<tr>
<td>Mini-Creta 3” [8]</td>
<td>750</td>
<td>29 7/16”</td>
</tr>
<tr>
<td>Mini-Creta 6” [8]</td>
<td>750</td>
<td>29 7/16”</td>
</tr>
<tr>
<td>Prescott 2.25” [8]</td>
<td>650</td>
<td>25 1/2”</td>
</tr>
<tr>
<td>Prescott 4.5” [8]</td>
<td>650</td>
<td>25 1/2”</td>
</tr>
<tr>
<td>Raffinato 90 mm [8]</td>
<td>750</td>
<td>29 7/16”</td>
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<tr>
<td>Raffinato 180 mm [8]</td>
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Techo-Bloc can help you in your preliminary design of retaining walls. However, preliminary design should only be used to assess the suitability of a wall system to a specific project or for estimating budget costs. For final construction designs, please contact a qualified engineer in your area.

CUSTOMER TYPE: [ ] Landscape Architect [ ] Engineer [ ] Contractor [ ] Other: ________________________ Are you a Techo-Pro? [ ] Yes [ ] No

1. GENERAL PROJECT INFORMATION

Project Name: ____________________________
Contact: ________________________________
Entreprise: ______________________________
E-mail: ________________________________
Telephone: ______________________________
Postal Code: ____________________________
City: ________________________________
State / Province: ______________________________

2. PROJECT SPECIFICATIONS

Type: [ ] Industrial [ ] Commercial [ ] Institutional [ ] Residential
Information date required: ________________________
Units (metric or imperial): ________________________

2.1 SPECIAL CONSIDERATIONS

Maximum available space behind wall: ________________________
Maximum required freestanding wall portion: ________________________

3. GENERAL INFORMATION ON WALLS

3.1 SINGLE WALL

Block Product: ____________________________
Wall length: ____________________________
Setback position or near vertical position: ____________________________
Maximum wall height (above ground): ____________________________
Horizontal Run: ____________________________
Vertical Rise: ____________________________

3.2 TIERED WALL

Horizontal run: ____________________________
Vertical Rise: ____________________________
Backslope: Horizontal run: ____________________________
Vertical rise: ____________________________
Platform between walls: Horizontal run: ____________________________
Vertical rise: ____________________________
Setback position or near vertical position: ____________________________
Upper wall: Block product: ____________________________
Wall height or length: ____________________________
Lower wall: Block product or length: ____________________________
Wall height or length: ____________________________

5. SURCHARGE ABOVE WALL

TYPE OF SURCHARGE (LOAD)

ROUTE: ____________________________
PARKING / ALLEY FOR HEAVY VEHICLES: ____________________________
PARKING / ALLEY FOR LIGHT VEHICLES: ____________________________
SWIMMING POOL: ____________________________
PAVED SURFACE: ____________________________
LAWN: ____________________________
OTHER: ____________________________

DISTANCE TO WALL: ____________________________
## COMPATIBILITY CHART

### Walls & Pillars

<table>
<thead>
<tr>
<th>Caps</th>
<th>Architectural cap</th>
<th>Brandon cap</th>
<th>Bullnose</th>
<th>Bullnose Grande</th>
<th>Escala 3.5&quot;</th>
<th>Graphix cap</th>
<th>Piedmonte</th>
<th>Piedmonte 12&quot;-30&quot;</th>
<th>Piedmonte 14&quot;-28&quot;</th>
<th>Piedmonte 28&quot;</th>
<th>Portofino</th>
<th>Prima 14&quot;</th>
<th>Raffinato 60 mm</th>
<th>Raffinato 90 mm</th>
<th>Raffinata Raw 14&quot;-28&quot;</th>
<th>Raffinato Raw 12&quot;-30&quot;</th>
<th>York 24&quot;</th>
<th>York 28&quot;</th>
<th>York 32&quot;</th>
<th>York 48&quot;</th>
<th>Blu 45 mm</th>
<th>Venetian</th>
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<tbody>
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</table>

NOTE: The combinations shown in this chart are not complete. Other possible combinations exist.

## Applications

### Caps

<table>
<thead>
<tr>
<th>Caps</th>
<th>Architectural cap</th>
<th>Brandon cap</th>
<th>Bullnose</th>
<th>Bullnose Grande</th>
<th>Escala 3.5&quot;</th>
<th>Graphix cap</th>
<th>Piedmonte</th>
<th>Piedmonte 12&quot;-30&quot;</th>
<th>Piedmonte 14&quot;-28&quot;</th>
<th>Piedmonte 28&quot;</th>
<th>Portofino</th>
<th>Prima 14&quot;</th>
<th>Raffinato 60 mm</th>
<th>Raffinato 90 mm</th>
<th>Raffinata Raw 14&quot;-28&quot;</th>
<th>Raffinato Raw 12&quot;-30&quot;</th>
<th>York 24&quot;</th>
<th>York 28&quot;</th>
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<td>Wall double-sided</td>
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</tbody>
</table>
Installation outline

01 EXCAVATION
A. Check the location of existing structures and utilities before starting the excavation.
B. Dig out a trench. Its depth should be calculated according to the thickness of the leveling pad and the burial depth of the wall.
C. Plan for a thickness of at least 6" (150 mm) for the leveling pad and consider that at least 10% of the height of the wall should be buried in the ground. In all cases, the wall must be buried no less than 6" (150 mm) deep.
D. In determining the width of the trench, allow for a space of at least 6" (150 mm) at the front of the wall and 12" (300 mm) at the back for drainage fill. Compact and level the excavation base.

FOR GEOGRID REINFORCED RETAINING WALLS
The excavation must also take into account the length of geogrid.

02 FOUNDATION
A. Cover the base and back of the trench with a geotextile. Extend the geotextile towards the back of the excavation and eventually above the drainage fill once it is in place close to the top of the wall.
B. Next, spread the 0-3/4" (0-20 mm) stone in the trench and compact using a vibratory plate or jumping jack, ensuring that the surface is level. The compacted leveling pad must be at least 6" (150 mm) thick.

NOTE FOR STEPPED FOUNDATION
A wall built on an incline requires stepped foundations. For steep inclines, several steps may be required. Construction should start at the lowest level. Each of the steps must follow a level horizontal path and the vertical distance separating the successive steps must equal the height of a block.
03 BUILDING THE FIRST COURSE
A. Using blocks of the same height, place the first course on the compacted leveling pad according to the predetermined layout. Check the alignment and leveling in all directions and make sure that all the blocks are in full contact with the leveling pad and properly supported.
B. Place the exposed surfaces of the blocks side by side. There must be no space between the exposed faces of adjacent blocks.
C. At the back of the wall and on the compacted leveling pad, lay a 4” (100 mm) diameter perforated drain. Connect this drain to the existing drainage system so that it clears the water accumulated behind the wall.

04 BACKFILLING
Backfill at the rear of the wall and the space between the back of the blocks with ¾” (20 mm) clean stone. Level and settle the clean stone. Any cavities in the blocks must also be filled with clean stone.

05 SUBSEQUENT COURSES
A. Clean the top of each block before laying the next course. Depending on the type of block, install the connectors on the extremity of each block.
B. Lay the subsequent courses, backfilling at the rear of the wall every 8” (200 mm maximum, using the same method outlined in step 4.
C. Make sure the subsequent courses are laid such that the vertical seams are aligned with the blocks below.

FOR GEOGRID REINFORCED RETAINING WALLS
Where geogrids are to be used, cover the clean stone with a geotextile. Select the geogrid according to the type, level and appropriate length. Position the geogrid according to the main reinforcement direction perpendicular to the wall. The geogrid must be continuous all along its embedment length. Splicing of the geogrid in the main reinforcement direction is not permitted. The geogrid must be installed horizontally over the compacted backfill and the previous course of blocks. Fix the connectors on the geogrid and lay the next course of blocks. Pull on the back of the geogrid and maintain its tension by stakes or pins. Repeat with a new section of geotextile and place the reinforced backfill directly behind the drainage fill. Fill and compact up to the level of the blocks. Heavy equipment must not be used less than 3’ (1-m) behind the blocks. Construction equipment must not drive directly over the geogrid. Repeat the various installation steps.

06 FINISHING
Position the course of coping stones (if applicable) or the final course of blocks to complete the wall. The coping stones or final course of blocks must be fixed to the subjacent blocks using concrete adhesive and there must be no space between the blocks.
INSTALLATION GUIDE

RETAINING WALLS

WALL INSTALLATION – GRAVITY WALL
Typical cross section

WALL INSTALLATION – GEOGRID REINFORCED WALL
Typical cross section
INSTALLATION GUIDE
RETAINING WALLS

Anchoring systems

BRANDON 180 mm

INCLINED WALL

VERTICAL WALL

HDPE vertical key (2 per unit) inserted in the back vertical slot. The key settles in the second receiving slot of lower block.

Setback of 9/16" (14 mm) by unit

Front of unit

Front of unit

Brandon 180 mm is equivalent to twice the Brandon 90 mm

G-Force

INCLINED WALL

HDPE vertical key (2 per unit) inserted in the vertical slot. The key settles in the receiving slot of lower block.

Setback of 9/16" (14 mm) by unit

Front of unit

MINI-CRETA 6"

INCLINED WALL

VERITCAL WALL

HDPE horizontal key is inserted in the back groove.

Setback of 9/16" (14 mm) by unit

Front of unit

Prescott 4.5"

INCLINED WALL

VERTICAL WALL

HDPE vertical key (2 per unit) inserted in the back vertical slot. The key settles in the first receiving slot of lower block.

Setback of 11/32" (9 mm) by unit

Front of unit

GRAPHIX

RETAINING WALL

FREESTANDING WALL

HDPE horizontal key is inserted in the front groove.

Variable

Front of unit

Front of unit

FRASENT WALL

INCLINED WALL

VERTICAL WALL

HDPE horizontal key is inserted in the front

groove.

Setback of 9/32" (7 mm) by unit

Front of unit

Front of unit

RAFFINATO 180 mm IS EQUIVALENT TO TWICE THE RAFFINATO 90 mm

MINI-CRETA 6" IS EQUIVALENT TO TWICE THE MINI-CRETA 3"

PRESCOTT 4.5" IS EQUIVALENT TO TWICE THE PRESCOTT 2.25"
### INSTALLATION GUIDE

**RETAILING WALLS**

**Anchoring system | Connectors in curved wall application**

#### HDPE Horizontal Key
When creating internal curves and the HDPE horizontal keys are in the back groove, two connectors must be installed on each block as illustrated.

#### HDPE Vertical Key
When creating curves using HDPE vertical keys adjust placement in field to achieve desired curve.

#### Precast concrete "U" Connector
When creating internal curves with the precast concrete "U" connector, place one connector on top center of each lower course block and adjust placement in field to achieve desired curve.

#### Precast concrete "Z" Connector
When creating internal curves with the precast concrete "Z" connector, place one connector on top center of each lower course block and adjust placement in field to achieve desired curve.

**Anchoring system | Connectors in geogrid reinforced wall application**

#### HDPE Horizontal Key
When installing a geogrid, using HDPE horizontal keys, it must be placed above the connectors. The connectors will therefore be placed before the geogrid. After positioning the geogrid, move the block (from the above course) forward until it touches the connectors and ensures that the system is locked.
**INSTALLATION GUIDE**

**RETAILING WALLS**

**HDPE Vertical Key**

When installing geogrid, using HDPE vertical keys, it must be placed immediately above the lower course block. The connectors will be inserted in the vertical slots of the upper course blocks. Ensure that pin all ways settles into the receiving slot of the lower course block and not on the geogrid. Once the pin settles, move forward the upper block until it touches the connectors and ensures that the system is locked.

**Internal corner**

When building a wall with an internal corner, it is recommended to start constructing the wall at the corner and build out from this point in both directions. To form the corner, use the longer modules as illustrated. Build wall B by extending it out from wall A so the end of wall B is aligned with the back of wall A. For subsequent courses, simply alternate the extension of walls A and B.

When using geogrid, it must be extended beyond the internal corner by at least 25% of the total height of the wall. Alternate the extension of the geogrid for subsequent layers (as illustrated in grey).
INSTALLATION GUIDE
RETAINING WALLS

External corner

For walls with an external corner, start building the wall from the corner and continue from this point in both directions. For each subsequent course, alternate the direction of the corner unit and secure the corner unit to the block below using concrete adhesive.

Oblique corner

The longer modules should be used to build an oblique external corner. Alternatively, corner can be replaced by a curve.

Note: Cut face finish may differ from original face finish

Note: Adjust placement in field to achieve desired angle
Internal curve

The Techo-Bloc retaining wall system allows walls to be built with internal and external curves. These curves can be achieved without cutting the blocks. You will need to angle the curves according to the minimum radius specified by Techo-Bloc.

When building a wall with an internal curve, it is recommended to start building the wall at the center of the curve and place blocks alternately to the left and right of the central block. If the wall to be constructed requires a setback (inclined wall), each course should be offset to the back and the curve will then become bigger. The minimum radius is therefore that of the first course.

When using geogrid, it must cover 100% of the surface around the curve. To do this, additional layers of geogrid are placed on the next course of blocks to fill voids created from previous course (as illustrated in green).
INSTALLATION GUIDE
RETAINING WALLS

External curve

When building a wall with an external curve, it is recommended to start building the wall at the center of the curve and place blocks alternately to the left and right of the central block. Unlike internal curves, the external curve gets smaller as courses are added. The minimum radius is therefore that of the last course.

When using geogrid, it must cover 100% of the surface around the curve. To achieve this, additional layers of geogrid are placed on the same course of blocks to fill voids (as illustrated in green). In this case, we recommend at least 3" (75 mm) of backfill in between the overlapping sections.
INSTALLATION GUIDE
RETAINING WALLS

Fencing
Fencing can be erected behind the blocks. Fence posts must be placed in formwork tubes positioned during construction of the wall and then filled with concrete. The geogrid may be cut to accommodate installation of the tubes. Cut the geogrid in alignment with the center of the formwork tube and perpendicular to the wall, thus creating two geogrid panels. Connect the two geogrid panels at the front and back of the formwork tube and bend the geogrid to fit around the formwork.

Guard Rail
As with fencing, a guardrail can be incorporated behind the blocks. The guardrail posts must be installed during construction of the wall. The geogrid is cut perpendicular to the wall and in alignment with the center of the post, thus creating two geogrid panels. These two panels are connected at the front and back of the post. The geogrid can be bent to fit around the post.
Tiered Wall

Although tiered walls look appealing, it is important to take into account the additional load the upper wall applies on the lower wall. If the distance between the walls is at least twice the height of the lower wall, the walls are generally independent of each other. However, if this distance is less the lower wall must be built to take account of the load of the upper wall and geogrids may be required.

If $H_1 > H_2$ and $D > (H_1 \times 2)$

The walls are generally independent of each other. Otherwise, the construction of the lower wall must take into account the load of the upper wall (as shown below).
Installation Outline

01 EXCAVATION
A. Check the location of existing structures and utilities before starting the excavation.
B. Dig out a trench. The trench should be 12” wider than the block width (6” (150 mm) at the front and at the back of the wall).
C. The trench should be a minimum 12” (300 mm) deep. This depth will provide 6” (150 mm) for the compacted base and a minimum 6” (150 mm) free-standing wall embedment.
D. In areas where unstable soils or one particularly affected by freeze-thaw cycles, a thicker compacted base may be necessary.
E. The foundation soil should be checked to make sure it is firm, level and capable of supporting the freestanding wall.

02 FOUNDATION
A. Cover the excavated area with a geotextile. Create a leveling pad of compacted aggregate base material. The pad should be composed of 0-¾” (0-20 mm) crushed stone with a minimum thickness of 6” (150 mm).

NOTE FOR STEPPED FOUNDATION
A wall built on an incline requires stepped foundations. For steep inclines, several steps may be required. Construction should start at the lowest level. Each of the steps must follow a level horizontal path and the vertical distance separating the successive steps must equal the height of a block.

03 BUILDING THE FIRST COURSE
A. Using blocks of the same height, place the first course on the compacted leveling pad according to the predetermined layout. Check the alignment and leveling in all directions and make sure that all the blocks are in full contact with the leveling pad and properly supported.
B. Place the blocks side by side. There must be no space between adjacent blocks. For alignment of straight walls, use a string line aligned on the connector’s slots of applicable units, or back of the block of full solid units.
C. For tapered units, alternate front and back faces to obtain straight walls.
Installation Outline

04 SUBSEQUENT COURSES
A. Clean the top of each block before laying the next course. Depending on the type of block, install the connectors if available on each block.
B. Stagger joints from one row to the next.
C. Glue all modules at each row with a concrete adhesive for securing.
D. All Free-standing walls must be installed in vertical position.
E. Any cavities in the blocks must be filled with 3/4" (20 mm) clean stone.
F. Continue building to the desired and permissible height.

05 FINISHING
A. Position the cap units (if applicable) or the final course of blocks to complete the wall. The cap units (if applicable) or final course of blocks must be fixed to the subjacent blocks using concrete adhesive and there must be no space between the blocks.
**INSTALLATION GUIDE**

**PILLARS**

**General Note**

It is important to adequately glue each row with a concrete adhesive in order to obtain a stable pillar.

If you are planning to install a light on top of the pillar, make sure you run the electrical wires prior to installing the blocks.

If you are planning to build a pillar with a planter, make sure to install a geotextile membrane inside the pillar before filling the cavity with planting soil.

**Installation Outline**

**01 EXCAVATION**

A. Check the location of existing structures and utilities before starting the excavation.

B. Excavate an area that is 12” (300 mm) wider than the pillar (6” [150 mm] at each side of the pillar).

C. The excavated area should be a minimum 12” (300 mm) deep. This depth will provide 6” (150 mm) for the compacted base and a minimum 6” (150 mm) of embedment.

D. In areas where unstable soils or one particularly affected by freeze-thaw cycles, a thicker compacted base may be necessary.

E. The foundation soil should be checked to make sure it is firm, level and capable of supporting the pillar.

**02 FOUNDATION**

A. Cover the excavated area with a geotextile. Create a leveling pad of compacted granular base material. The pad should be composed of 0-¾” (0-20 mm) crushed stone with a minimum thickness of 6” (150 mm).

**03 BUILDING THE FIRST COURSE**

A. Using the corresponding pillar or corner units, place the first course on the compacted base according to the predetermined layout. Check the alignment and leveling in all directions and make sure that all the blocks are in full contact with the base and properly supported.
**Installation outline**

**04 SUBSEQUENT COURSES**
A. Clean the top of each block before laying the next course.
B. Stagger joints from one row to the next.
C. Glue all modules at each row with a concrete adhesive for securing.
D. Backfill the excavated area surrounding the pillar.
E. Continue building to desired and permissible height.

**05 CROWNING**
A. Crown the pillar using Techo-Bloc Pillar cap units and securing to blocks underneath with a concrete adhesive.
**INSTALLATION GUIDE**

**FREESTANDING WALLS - BOREALIS**

**BOREALIS**

A. BOREALIS DOUBLE-SIDED WALL UNITS
   SECURE EACH ROW WITH CONCRETE ADHESIVE
B. EMBEDMENT DEPTH, 6" (150 mm) MIN.
C. 24" (612 mm) MAX.
D. GEOTEXTILE
E. COMPACTED GRANULAR LEVELING PAD, 6" (150 mm) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

---

**90° CORNER OF A DOUBLE-SIDED WALL**

1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.

---

**DOUBLE-SIDED WALL - END OF A STRAIGHT WALL**
INSTALLATION GUIDE
GRILL ISLAND - BOREALIS

A. YORK COUNTER TOP 24” X 36” X 2 ¼” (CUT ON FIELD AS REQUIRED)
B. BOREALIS WALL UNIT
C. BOREALIS WALL UNIT CUT IN HALF (CUT ON FIELD)
D. BOREALIS WALL UNIT (CUT ON FIELD AS REQUIRED)
E. CAST IN PLACE CONCRETE SLAB 4350 PSI (30 MPA), 5” (125 MM) THICK
F. 4X4-4/4 (102X102-MW25.8XMW25.8) WELDED WIRE MESH AND/OR REBAR AS PER SITE CONDITIONS
G. 12” (300 MM) DIA. CONCRETE PILLAR, AS PER LOCAL CODE
H. 3/4” (20 MM) CLEAN STONE
6” (150 MM) THICK MIN. AS PER SITE CONDITIONS
I. GEOTEXTILE
J. NATURAL SOIL OR COMPACTED BACKFILL

QUANTITY OF MATERIALS REQUIRED
- York Counter top 24” x 36” x 2 ¼” : 4
- Borealis wall unit: 28

NOTE: Appliances and utilities may vary for each project and are not shown on this drawing. This drawing is shown for inspiration only and surplus or shortage of materials may result. It is the user’s responsibility to verify for the quantity of materials required. Secure the blocks using a heat resistant concrete adhesive. The installer must ensure that the installation and use of the grill island comply with local regulations and code requirements. Concrete pillars extending to frost line may be required as per local code. Check your local building code before installing.
1. The information contained in the design charts is supplied for information purposes only and as such should only be used for preliminary designs.
2. The height (H) of the wall is the total height from the leveling pad to the top of the wall not including the thickness of the cap.
3. Soil parameters: reinforced soil ($\varphi = 35^\circ$, $\gamma = 22$ kN/m$^3$); retained soil ($\varphi = 26^\circ$, $\gamma = 20$ kN/m$^3$); foundation soil ($\varphi = 26^\circ$, $\gamma = 20$ kN/m$^3$)
4. A qualified engineer should be consulted for the final design to be used for construction.
5. The foundation soil must be able to support the wall system. The bearing capacity of the foundation soil, settlement, and global stability must be verified and validated by a qualified geotechnical engineer.
6. The seismic analysis is not included.
7. The design charts do not apply to tiered walls.
8. The charts assume that the walls are constructed in accordance with Techo-Bloc specifications, good construction practice and an adequate drainage system.
9. The geogrid layout has been optimized to satisfy the design requirements of the NCMA’s Design Manual for Segmental Retaining Walls, 3rd Edition.
10. The minimum burial depth must be 150 mm (6 in) or 10% of the exposed height, whichever is greater.
11. Engineering judgement should be used when interpolating between heights.
12. Techo-Bloc and its predecessors, successors, beneficiaries, employees, associates, administrators and insurers accepts no liability for the incorrect use of information contained in the design charts.
13. For further information, please contact our technical service department.
The 1-row pattern provides three different combinations. Each combination is 10.38’ (3.165 m) long and 7 \( \frac{1}{16}'' \) (180 mm) high. This pattern can be used for installing the last row of modules or where other patterns cannot be used.

<table>
<thead>
<tr>
<th>Number of Blocks Required</th>
<th>Module</th>
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</thead>
<tbody>
<tr>
<td><strong>BRANDON</strong></td>
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<tr>
<td>67% of the surface - Brandon 90 mm</td>
<td>4</td>
</tr>
<tr>
<td>33% of the surface - Brandon 180 mm</td>
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</table>
3-Row Pattern | Laying Patterns

The 3-row pattern is 10.38’ (3.165 m) long and 21 1/4” (540 mm) high. This pattern allows a continuous leveled surface every 21 1/4” (540 mm), which corresponds to the recommended maximum spacing between the layers of geogrid in a Brandon wall. This pattern is recommended when using the geogrid.

### Number of Blocks Required

<table>
<thead>
<tr>
<th>BRANDON</th>
<th>MODULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>67% of the surface - Brandon 90 mm</td>
<td>A 12</td>
</tr>
<tr>
<td>33% of the surface - Brandon 180 mm</td>
<td>A 3</td>
</tr>
</tbody>
</table>
INSTALLATION GUIDE
RETAINING WALLS - BRANDON 90 & 180 mm

4-Row Pattern | Laying Patterns

The 4-row pattern is 10.38’ (3.165 m) long and 28 3/8'' (720 mm) high. This pattern should be used only where the geogrid is not required.

Number of blocks required

<table>
<thead>
<tr>
<th>BRANDON</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>67% of the surface - Brandon 90 mm</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>33% of the surface - Brandon 180 mm</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>
INSTALLATION GUIDE

FREESTANDING WALLS - BRANDON 90 & 180 mm

BRANDON 90 mm & 180 mm

A. TECHO-BLOC CAP UNIT SECURED TO UNIT BELOW WITH CONCRETE ADHESIVE
B. BRANDON 90 mm AND 180 mm DOUBLE-SIDED WALL UNITS SECURE EACH ROW WITH CONCRETE ADHESIVE
C. CONNECTOR
D. EMBEDMENT DEPTH, 6” (150 mm) MIN.
E. 29 7/16” (750 mm) MAX.
F. GEOTEXTILE
G. COMPACTED GRANULAR LEVELING PAD, 6” (150 mm) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

90° CORNER OF A DOUBLE-SIDED WALL

1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.
4. Cavities, grooves and connectors are not illustrated to avoid overloading the image.

DOUBLE-SIDED WALL - END OF A STRAIGHT WALL

GENERAL NOTES

1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.
4. Cavities, grooves and connectors are not illustrated to avoid overloading the image.
INSTALLATION GUIDE
DOUBLE-SIDED WALL RADIUS - BRANDON 90 & 180 mm

It is the user’s responsibility to verify for the quantity of materials required.

STEPS

BRANDON
90 mm

BRANDON
180 mm

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE
PILLARS - BRANDON 90 & 180 mm

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE
PILLARS - BRANDON 90 & 180 mm

BRANDON 90 mm & 180 mm

OPTION A
A. PILLAR CAP UNIT, SECURE TO UNITS BELOW WITH A CONCRETE ADHESIVE
B. BRANDON 90 mm PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. BRANDON 180 mm PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
D. EMBEDMENT DEPTH: 150 mm (6") MIN.
E. 900 mm (35 7/16"), 1 080 mm (42 1/2"), MAXIMUM HEIGHT
F. GEOTEXTILE
G. COMPACTED GRANULAR BASE 150 mm (6") THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

OPTION B
A. PILLAR CAP UNIT, SECURE TO UNITS BELOW WITH A CONCRETE ADHESIVE
B. BRANDON 90 mm PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. BRANDON 180 mm PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
D. EMBEDMENT DEPTH: 150 mm (6") MIN.
E. 900 mm (35 7/16"), 1 080 mm (42 1/2"), MAXIMUM HEIGHT
F. GEOTEXTILE
G. COMPACTED GRANULAR BASE 150 mm (6") THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE

GRILL ISLAND - BRANDON 90 & 180 mm

A. YORK COUNTER TOP 24" × 36" × 2 1/4"
B. BRANDON 90 mm UNIT (A, B OR C) – LONG FACE EXPOSED (SHOWN WITH UPPERCASE LETTER)
C. BRANDON 90 mm UNIT (A, B OR C) – SHORT FACE EXPOSED (SHOWN WITH LOWERCASE LETTER)
D. BRANDON 180 mm UNIT (A, B OR C) – LONG FACE EXPOSED (SHOWN WITH UPPERCASE LETTER)
E. BRANDON 180 mm UNIT (A, B OR C) – SHORT FACE EXPOSED (SHOWN WITH LOWERCASE LETTER)
F. BRANDON 90 mm PILLAR UNIT
G. BRANDON 180 mm PILLAR UNIT
H. BRANDON UNIT CUT ON FIELD
I. CAST IN PLACE CONCRETE SLAB 4350 PSI (30 MPA), 5" (125 MM) THICK
J. 4X4-4/4 (102X102-MW25.8XMW25.8) WELDED WIRE MESH AND/OR REBAR AS PER SITE CONDITIONS
K. 12” (300 MM) DIA. CONCRETE PILLAR, AS PER LOCAL CODE
L. 3/4” (20 MM) CLEAN STONE
M. NATURAL SOIL OR COMPACTED BACKFILL
N. GEOTEXTILE

QUANTITY OF MATERIALS REQUIRED
- York Counter top 24” × 36” × 2 1/4": 4
- Brandon 90 mm unit: 20 A, 20 B, 18 C
- Brandon 180 mm unit: 10 A, 10 B, 9 C
- Brandon 90 mm Pillar unit: 18
- Brandon 180 mm Pillar unit: 15

NOTE: Appliances and utilities may vary for each project and are not shown on this drawing. This drawing is shown for inspiration only and surplus or shortage of materials may result. It is the user’s responsibility to verify for the quantity of materials required. Secure the blocks using a heat resistant concrete adhesive. The installer must ensure that the installation and use of the grill island comply with local regulations and code requirements. Concrete pillars extending to frost line may be required as per local code. Check your local building code before installing.
NOTE: Secure the blocks using a heat resistant concrete adhesive. The installer must ensure that the installation and use of the pizza oven comply with local regulations and code requirements. The construction of the base should include the installation of a concrete slab and pillars under the slab. The depth of the pillars and reinforcement requirements should be determined based on site conditions and comply with local code.
INSTALLATION GUIDE
FREESTANDING WALLS - ESCALA 3.5"

ESCALA 3.5"

A. TECHO-BLOC CAP UNIT SECURED TO UNIT BELOW WITH CONCRETE ADHESIVE
B. ESCALA 3.5" DOUBLE-SIDED WALL UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. CONNECTOR
D. EMBEDMENT DEPTH, 6" (150 mm) MIN.
E. 750 mm (29 7/16") MAX.
F. GEOTEXTILE
G. COMPACTED GRANULAR BASE 0-20 mm (0-3/4"), 300 mm (12") THICK MIN.

90° CORNER OF A DOUBLE-SIDED WALL

1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.
4. Cavities, grooves and connectors are not illustrated to avoid overloading the image.
5. It is possible to alternate the blocks (A, B or C) in the same row to create different patterns. However, a corner block must always be present at the end of a row and must be alternated for each subsequent row.

DOUBLE-SIDED WALL - END OF A STRAIGHT WALL

* It is possible to alternate the blocks (A, B or C) in the same row to create different patterns. However, a corner block must always be present at the end of a row and must be alternated for each subsequent row.
INSTALLATION GUIDE
DOUBLE-SIDED WALL RADIUS - ESCALA 3.5”

It is the user's responsibility to verify for the quantity of materials required.

STEPS

ESCALA 3.5”

For all possible combinations of walls and caps, please refer to the correspondence table on 100.

CAP RADIUS - ESCALA 3.5”

It is the user's responsibility to verify for the quantity of materials required.
1. The information contained in the design charts is supplied for information purposes only and as such should only be used for preliminary designs.

2. The height (H) of the wall is the total height from the top of the leveling pad to the top of the wall not including the thickness of the cap.

3. Soil parameters: reinforced soil (p = 35°, γ = 22 kN/m³); retained soil (p = 26°, γ = 20 kN/m³); foundation soil (p = 26°, γ = 20 kN/m³)

4. A qualified engineer should be consulted for the final design to be used for construction.

5. The foundation soil must be able to support the wall system. The bearing capacity of the foundation soil, settlement, and global stability must be verified and validated by a qualified geotechnical engineer.

6. The seismic analysis is not included.

7. The design charts do not apply to tiered walls.

8. The charts assume that the walls are constructed in accordance with Techo-Bloc specifications, good construction practice and an adequate drainage system.

9. The geogrid layout has been optimized to satisfy the design requirements of the NCMA’s Design Manual for Segmental Retaining Walls, 3rd Edition.

10. The minimum burial depth must be 150 mm (6 in) or 10% of the exposed height, whichever is greater.

11. Engineering judgement should be used when interpolating between heights.

12. Techo-Bloc and its predecessors, successors, beneficiaries, employees, associates, administrators and insurers accepts no liability for the incorrect use of information contained in the design charts.

13. For further information, please contact our technical service department.
INSTALLATION GUIDE
GRAVITY AND REINFORCED WALLS - G-FORCE

A. CAP FROM TECHO-BLOC
B. G-FORCE BLOCK FROM TECHO-BLOC
C. WALL INCLINATION (3.9°)
D. EXPOSED HEIGHT
E. HDPE VERTICAL KEY
F. EMBEDMENT DEPTH
G. TOP SOIL
H. LOW PERMEABILITY SOIL
I. 3/4" (20 MM) CLEAN STONE
J. RETAINED SOIL
K. GEOTEXTILE
L. PERFORATED DRAIN
M. LEVELING PAD
N. FOUNDATION SOIL
O. GEOGRID
P. REINFORCED SOIL
Q. GEOGRID LENGTH

STEPS - G-FORCE

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
For all possible combinations of walls and caps, please refer to the correspondence table on 100.
1. The information contained in the design charts is supplied for information purposes only and as such should only be used for preliminary designs.

2. The height (H) of the wall is the total height from the leveling pad to the top of the wall not including the thickness of the cap.

3. Soil parameters: reinforced soil ($\phi = 35^\circ$, $\gamma = 22 \text{ kN/m}^3$); retained soil ($\phi = 26^\circ$, $\gamma = 20 \text{ kN/m}^3$); foundation soil ($\phi = 26^\circ$, $\gamma = 20 \text{ kN/m}^3$)

4. An qualified engineer should be consulted for the final design to be used for construction.

5. The foundation soil must be able to support the wall system. The bearing capacity of the foundation soil, settlement, and global stability must be verified and validated by a qualified geotechnical engineer.

6. The seismic analysis is not included.

7. The design charts do not apply to tiered walls.

8. The charts assume that the walls are constructed in accordance with Techo-Bloc specifications, good construction practice and an adequate drainage system.

9. The geogrid layout has been optimized to satisfy the design requirements of the NCMA’s Design Manual for Segmental Retaining Walls, 3rd Edition.

10. The minimum burial depth must be 150 mm (6 in) or 10% of the exposed height, whichever is greater.

11. Engineering judgement should be used when interpolating between heights.

12. Techo-Bloc and its predecessors, successors, beneficiaries, employees, associates, administrators and insurers accepts no liability for the incorrect use of information contained in the design charts.

13. For further information, please contact our technical service department.
INSTALLATION GUIDE
FREESTANDING WALLS - GRAPHIX

GRAPHIX
A. TECHO-BLOC CAP UNIT SECURED TO UNIT BELOW WITH CONCRETE ADHESIVE
B. GRAPHIX DOUBLE-SIDED WALL UNITS SECURE EACH ROW WITH CONCRETE ADHESIVE.
C. CONNECTOR
D. EMBEDMENT DEPTH, 6” (150 mm) MIN.
E. 23 1/2” (600 mm) MAX.
F. FOR THE FIRST ROW, ALWAYS USE THE DEEPER GRAPHIX BLOCK
G. GEOTEXTILE
H. COMPACTED GRANULAR LEVELING PAD, 6” (150 mm) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

90° CORNER OF A DOUBLE-SIDED WALL

1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.
4. Connectors are not illustrated to avoid overloading the image.
5. It is possible to alternate the blocks (1, 2, 3 or 4) in the same row to create different patterns. However, a corner block (1A, 2A, 3A or 4A) must always be present at the end of a row and must be alternated for each subsequent row.
6. At the corner, make sure to place the blocks so that the grooves of the block cannot be seen.

DOUBLE-SIDED WALL - END OF A STRAIGHT WALL

* It is possible to alternate the blocks (1, 2, 3 or 4) in the same row to create different patterns. However, a corner block and a cut corner block (1A, 2A, 3A or 4A) must always be present at the end of a row and must be alternated for each subsequent row.
INSTALLATION GUIDE
PILLARS - GRAPHIX

NOTES:
- ALL UNITS MUST BE CUT ON FIELD
- USE A CHISEL FOR DESIRED SPLITTED TEXTURE FACE

A. PILLAR CAP UNIT (SECURE WITH CONCRETE ADHESIVE)
B. GRAPHIX CORNER UNIT
SECURE EACH ROW WITH CONCRETE ADHESIVE
CUT EACH BLOCK AT 16” (406 mm) FROM THE CORNER EDGE
C. USE THE BLOCKS 1A-3A FOR THE ODD ROWS,
D. USE THE BLOCKS 2A-4A FOR THE EVEN ROWS
E. EMBEDMENT DEPTH 6” (150 mm) MIN.
F. 23 5⁄8" (600 mm) HEIGHT PER PALLET
47 ¼” (1200 mm) MAXIMUM HEIGHT
G. GEOTEXTILE
H. COMPACTED GRANULAR BASE 6” (150 mm) THICK MIN.
THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE
FREESTANDING WALLS - MANCHESTER

MANCHESTER

A. TECHO-BLOC CAP UNIT SECURED TO UNIT BELOW WITH CONCRETE ADHESIVE
B. MANCHESTER DOUBLE-SIDED WALL UNITS SECURE EACH ROW WITH CONCRETE ADHESIVE
C. EMBEDMENT DEPTH, 6" (150 mm) MIN.
D. 21 9/16" (550 mm) MAX. FOR BLOCK DEPTH OF 7 7/8" (200 mm)
D. 29 7/16" (750 mm) MAX. FOR BLOCK DEPTH OF 11 13/16" (300 mm)
E. GEOTEXTILE
F. COMPACTED GRANULAR LEVELING PAD, 6\" (150 mm) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

90° CORNER OF A DOUBLE-SIDED WALL

1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.

DOUBLE-SIDED WALL - END OF A STRAIGHT WALL

1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.
MANCHESTER PILLAR

A. PILLAR CAP UNIT  
(SECURE WITH CONCRETE ADHESIVE)

B. MANCHESTER UNIT SECURE EACH ROW 
WITH CONCRETE ADHESIVE

C. EMBEDMENT 6" (150 mm) MIN.

D. 35 \( \frac{3}{4} \)" (900 mm), HEIGHT PER PALLET 
47 \( \frac{3}{4} \)" (1200 mm), MAXIMUM HEIGHT

E. GEOTEXTILE

F. COMPACTED GRANULAR BASE 150 mm (6") 
THICK MIN. THICKNESS ACCORDING TO 
PROJECT SPECIFIC CONDITIONS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
REINFORCED SOIL: GRAVEL / SAND AND GRAVEL MIXES (Ø=35°, γ = 22 kN/m³)

GEOGRID: MIRAGRIDGE 3XT BY TENCATE (RFd=1.10, RFc=1.45, RFd=1.25, Cds=0.9, Cl=0.9)

CASE N° 1:
- No Surcharge
- No Backslope
- No Toe Slope

VISIT WWW.TECHO-BLOC.COM FOR COMPLETE DESIGN CHART DOCUMENT

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1. The information contained in the design charts is supplied for information purposes only and as such should only be used for preliminary designs.
2. The height (H) of the wall is the total height from the leveling pad to the top of the wall not including the thickness of the cap.
3. Soil parameters: reinforced soil (ϕ = 35°, γ = 22 kN/m³), retained soil (ϕ =26°, γ = 20 kN/m³), foundation soil (ϕ=26°, γ = 20 kN/m³)
4. A qualified engineer should be consulted for the final design to be used for construction.
5. The foundation soil must be able to support the wall system. The bearing capacity of the foundation soil, settlement, and global stability must be verified and validated by a qualified geotechnical engineer.
6. The seismic analysis is not included.
7. The design charts do not apply to tiered walls.
8. The charts assume that the walls are constructed in accordance with Techo-Bloc specifications, good construction practice and an adequate drainage system.
9. The geogrid layout has been optimized to satisfy the design requirements of the NCMA’s Design Manual for Segmental Retaining Walls, 3rd Edition.
10. The minimum burial depth must be 150 mm (6 in) or 10% of the exposed height, whichever is greater.
11. Engineering judgement should be used when interpolating between heights.
12. Techo-Bloc and its predecessors, successors, beneficiaries, employees, associates, administrators and insurers accepts no liability for the incorrect use of information contained in the design charts.
13. For further information, please contact our technical service department.
1-Row Pattern | Laying Patterns

The 1-row pattern provides five different combinations. Each combination is 8.9’ (2.7 m) long and 5 7/8” (150 mm) high. This pattern can be used to lay the last course of units or when the other models cannot be used.

**NUMBER OF BLOCKS REQUIRED**

<table>
<thead>
<tr>
<th>MINI-CRETA</th>
<th>MODULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>67% of the surface - Mini-Creta 3”</td>
<td>A</td>
</tr>
<tr>
<td>33% of the surface - Mini-Creta 6”</td>
<td>1</td>
</tr>
</tbody>
</table>
3-Row Pattern | Laying Patterns

The 3-row pattern provides four different combinations. Each combination is 8.9’ (2.7 m) long and 17\(\frac{11}{16}\)” (450 mm) high. This pattern gives a leveled surface every 17\(\frac{11}{16}\)” (450 mm), which is the recommended spacing between two layers of geogrid in a Mini-Creta wall. This pattern is recommended when using geogrid.

<table>
<thead>
<tr>
<th>NUMBER OF BLOCKS REQUIRED</th>
<th>MODULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINI-CRETA</td>
<td>A</td>
</tr>
<tr>
<td>78% of the surface - Mini-Creta 3”</td>
<td>14</td>
</tr>
<tr>
<td>22% of the surface - Mini-Creta 6”</td>
<td>2</td>
</tr>
</tbody>
</table>
5-Row Pattern | Laying Patterns

The 5-row pattern provides three different combinations. Each combination is 8.9’ (2.7 m) long and 29 1⁄2” (750 mm) high. This pattern should only be used when geogrid is not required.

<table>
<thead>
<tr>
<th>NUMBER OF BLOCKS REQUIRED</th>
<th>MINI-CRETA</th>
<th>MODULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>73% of the surface</td>
<td>Mini-Creta 3”</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>27% of the surface</td>
<td>Mini-Creta 6”</td>
<td>4</td>
</tr>
</tbody>
</table>
### INSTALLATION GUIDE

**FREESTANDING WALLS - MINI-CRETA 3” AND 6”**

- **MINI-CRETA 3” & 6”**
  - A. TECHO-BLOC CAP UNIT SECURED TO UNIT BELOW WITH CONCRETE ADHESIVE
  - B. MINI-CRETA 3” AND 6” DOUBLE-SIDED WALL UNITS SECURE EACH ROW WITH CONCRETE ADHESIVE
  - C. CONNECTOR
  - D. EMBEDMENT DEPTH, 6” (150 mm) MIN.
  - E. 29 7/16” (750 mm) MAX.
  - F. GEOTEXTILE
  - G. COMPACTED GRANULAR LEVELING PAD, 6” (150 mm) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

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**90° CORNER OF A DOUBLE-SIDED WALL**

The corner block must be cut to reveal the texture.

1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.
4. Cavities, grooves and connectors are not illustrated to avoid overloading the image.
5. It is possible to alternate the blocks (A, B or C) in the same row to create different patterns. However, a corner block must always be present at the end of a row and must be alternated for each subsequent row.

---

**DOUBLE-SIDED WALL - END OF A STRAIGHT WALL**

* It is possible to alternate the blocks (A, B or C) in the same row to create different patterns. However, a corner block must always be present at the end of a row and must be alternated for each subsequent row.
Installation Guide
Double-Sided Wall Radius - Mini-Creta 3” and 6”

It is the user’s responsibility to verify for the quantity of materials required.

Steps

Mini-Creta 3”

Mini-Creta 6”

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE
PILLARS- MINI-CRETA 3” AND 6”

**PILLAR 24”×3” & 24”×6” MINI-CRETA - OPTION A**

A. PILLAR CAP UNIT (SECURE WITH CONCRETE ADHESIVE)
B. PILLAR 24” × 6” (MINI-CRETA) UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. PILLAR 24” × 3” (MINI-CRETA) UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
D. EMBEDMENT 6” (150 mm) MIN.
E. 35 7/16” (900 mm) 47 1/4” (1200 mm), MAXIMUM HEIGHT
F. GEOTEXTILE
G. COMPACTED GRANULAR BASE 150 mm (6”) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

**PILLAR 24”×3” & 24”×6” MINI-CRETA - OPTION B**

A. PILLAR CAP UNIT (SECURE WITH CONCRETE ADHESIVE)
B. PILLAR 24” × 3” (MINI-CRETA) UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. PILLAR 24” × 6” (MINI-CRETA) UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
D. EMBEDMENT 6” (150 mm) MIN.
E. 35 7/16” (900 mm) 47 1/4” (1200 mm), MAXIMUM HEIGHT
F. GEOTEXTILE
G. COMPACTED GRANULAR BASE 150 mm (6”) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE
PILLARS- MINI-CRETA 3” AND 6”

PILLAR 24”×3”
MINI-CRETA
A. PILLAR CAP UNIT (SECURE WITH CONCRETE ADHESIVE)
B. PILLAR 24” × 3” (MINI-CRETA) UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. EMBEDMENT 6” (150 mm) MIN.
D. 35 7/16“ (900 mm), HEIGHT PER PALLET 47 7/8” (1200 mm), MAXIMUM HEIGHT
E. GEOTEXTILE
F. COMPACTED GRANULAR BASE 150 mm (6”) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

PILLAR 24”×6”
MINI-CRETA
A. PILLAR CAP UNIT (SECURE WITH CONCRETE ADHESIVE)
B. PILLAR 24” × 6” (MINI-CRETA) UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. EMBEDMENT 6” (150 mm) MIN.
D. 35 7/16“ (900 mm), HEIGHT PER PALLET 47 7/8” (1200 mm), MAXIMUM HEIGHT
E. GEOTEXTILE
F. COMPACTED GRANULAR BASE 150 mm (6”) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE
GRILL ISLAND 6 FT - MINI-CRETA 3” AND 6”

ELEVATION A

A. YORK COUNTER TOP 24” × 36” × 2 1/4”

B. MINI-CRETA 3” UNIT (A, B, B*, C, OR D)

C. MINI-CRETA 6” UNIT (A, B, B*, C, OR D)

D. PILLAR 24” × 36” (MINI-CRETA) UNIT

E. PILLAR 24” × 36” (MINI-CRETA) UNIT (CUT ON FIELD)

F. CAST IN PLACE CONCRETE SLAB 4350 PSI (30 MPA), 5” (125 MM) THICK

G. 4X4-4/4 (102X102-MW25.8XMW25.8) WELDED WIRE MESH AND/OR REBAR AS PER SITE CONDITIONS

H. 12” (300 MM) DIA. CONCRETE PILLAR, AS PER LOCAL CODE

I. 3/4” (20 MM) CLEAN STONE

J. NATURAL SOIL OR COMPACTED BACKFILL

K. GEOTEXTILE

ELEVATION B

QUANTITY OF MATERIALS REQUIRED

- York Counter top 24” × 36” × 2 1/4”: 4

- Mini-Creta 3” unit: 32 A, 24 B, 8 B*, 14 C, 10 D

- Mini-Creta 6” unit: 6 A, 6 B, 2 B*, 6 C, 6 D

- Pillar 24” × 6” (Mini-Creta) unit: 28

NOTE: Appliances and utilities may vary for each project and are not shown on this drawing. This drawing is shown for inspiration only and surplus or shortage of materials may result. It is the user’s responsibility to verify for the quantity of materials required. Secure the blocks using a heat resistant concrete adhesive. The installer must ensure that the installation and use of the grill island comply with local regulations and code requirements. Concrete pillars extending to frost line may be required as per local code. Check your local building code before installing.
SECTION 1-1

A. STEEL BOX INSERT
B. CLEAN STONE ¾” (20 mm), 4” (100 mm) THICK
C. PIEDIMONTE CAP (12"X30")
D. MINI-CRETA 3” BLOCK
E. MINI-CRETA 6” BLOCK
F. TECHO-BLOC PAVERS OR SLABS
G. SETTING BED 1” (25 mm)
H. COMPACTED GRANULAR 0-¾” (0-20 mm)
I. PILLAR 24”x6” MINI-CRETA

QUANTITY OF MATERIALS REQUIRED
- Piedimonte Cap (12”x30”) = 6
- Mini-Creta 3” (A) = 8
- Mini-Creta 3” (B or B*) = 8
- Mini-Creta 3” (C or D) = 8
- Mini-Creta 6” (A) = 4
- Mini-Creta 6” (B or B*) = 4
- Mini-Creta 6” (C or D) = 4
- Pillar 24”x6” Mini-Creta = 12

NOTE: Secure the blocks using a heat resistant concrete adhesive. The installer must ensure that the installation and use of the firepit comply with local regulations and code requirements.
PRESCOTT RETAINING WALL – LAYING PATTERNS

The different modules of the Prescott retaining wall allow the installation of different block combinations. Eight combinations are shown as an example. Each combination is 24” (610 mm) long and 6 3/4” (171 mm) high.

The wall installation will be facilitated if the height of the wall is calculated in multiples of 6 3/4” and the length in multiples of 24”.

Percentage of blocks required
Prescott 2.25”: 33 % of the surface
Prescott 4.5”: 67 % of the surface
INSTALLATION GUIDE
FREESTANDING WALLS - PRESCOTT 2.25" & 4.5"

PRESCOTT 2.25" & 4.5"

A. TECHO-BLOC CAP UNIT, SECURED TO UNIT BELOW WITH CONCRETE ADHESIVE
B. PRESCOTT 2.25" AND 4.5" DOUBLE-SIDED WALL UNITS SECURE EACH ROW WITH CONCRETE ADHESIVE
C. CONNECTOR
D. EMBEDMENT DEPTH, 6" (150 mm) MIN.
E. 25⅝" (650 mm) MAX.
F. GEOTEXTILE
G. COMPACTED GRANULAR LEVELING PAD, 6" (150 mm) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

90° CORNER OF A DOUBLE-SIDED WALL

Module creation 2

Module creation 2

DOUBLE-SIDED WALL - END OF A STRAIGHT WALL

Module creation 1

Module creation 2

GENERAL NOTES
1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.
4. Cavities, grooves and connectors are not illustrated to avoid overloading the image.
INSTALLATION GUIDE
DOUBLE-SIDED WALL RADIUS - PRESCOTT 2.25" & 4.5"

It is the user’s responsibility to verify for the quantity of materials required.

STEPS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE
PILLARS - PRESCOTT 2.25” & 4.5”

A. PILLAR CAP UNIT
   (SECURE WITH CONCRETE ADHESIVE)
B. PRESCOTT 2.25” PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. EMBEDMENT DEPTH, 6” (150 mm) MIN.
D. 40 1/2” (1,029 mm), HEIGHT PER PALLET 45” (1,143 mm), MAX. HEIGHT
E. GEOTEXTILE
F. COMPACTED GRANULAR BASE 6” (150 mm) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

A. PILLAR CAP UNIT
   (SECURE WITH CONCRETE ADHESIVE)
B. PRESCOTT 4.5” PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. EMBEDMENT DEPTH, 6” (150 mm) MIN.
D. 40 1/2” (1,029 mm), HEIGHT PER PALLET 45” (1,143 mm), MAX. HEIGHT
E. GEOTEXTILE
F. COMPACTED GRANULAR BASE 6” (150 mm) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE
PILLARS - PRESCOTT 2.25” & 4.5”

PRESCOTT 2.25” & 4.5”
OPTION A

A. PILAR CAP UNIT
   (SECURE WITH CONCRETE ADHESIVE)
B. PRESCOTT 2.25” PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. PRESCOTT 4.5” PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
D. EMBEDMENT DEPTH, 6” (150 mm) MIN.
E. 40 1/2” (1 029 mm)
   45” (1 143 mm), MAX. HEIGHT
F. GEOTEXTILE
G. COMPACTED GRANULAR BASE 6” (150 mm)
   THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

PRESCOTT 2.25” & 4.5”
OPTION B

A. PILAR CAP UNIT
   (SECURE WITH CONCRETE ADHESIVE)
B. PRESCOTT 2.25” PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. PRESCOTT 4.5” PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
D. EMBEDMENT DEPTH, 6” (150 mm) MIN.
E. 40 1/2” (1 029 mm)
   45” (1 143 mm), MAX. HEIGHT
F. GEOTEXTILE
G. COMPACTED GRANULAR BASE 6” (150 mm)
   THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
1. The information contained in the design charts is supplied for information purposes only and as such should only be used for preliminary designs.
2. The height (H) of the wall is the total height from the leveling pad to the top of the wall not including the thickness of the cap.
3. Soil parameters: reinforced soil ($\phi = 35^\circ$, $\gamma = 22\, \text{kN/m}^3$), retained soil ($\phi = 26^\circ$, $\gamma = 20\, \text{kN/m}^3$), foundation soil ($\phi = 26^\circ$, $\gamma = 20\, \text{kN/m}^3$).
4. A qualified engineer should be consulted for the final design to be used for construction.
5. The foundation soil must be able to support the wall system. The bearing capacity of the foundation soil, settlement, and global stability must be verified and validated by a qualified geotechnical engineer.
6. The seismic analysis is not included.
7. The design charts do not apply to tiered walls.
8. The charts assume that the walls are constructed in accordance with Techo-Bloc specifications, good construction practice and an adequate drainage system.
9. The geogrid layout has been optimized to satisfy the design requirements of the NCMA's Design Manual for Segmental Retaining Walls, 3rd Edition.
10. The minimum burial depth must be 150 mm (6 in) or 10% of the exposed height, whichever is greater.
11. Engineering judgement should be used when interpolating between heights.
12. Techo-Bloc and its predecessors, successors, beneficiaries, employees, associates, administrators and insurers accepts no liability for the incorrect use of information contained in the design charts.
13. For further information, please contact our technical service department.


**INSTALLATION GUIDE**  
RETAINING WALLS - RAFFINATO 90 mm & 180 mm

1-Row Pattern | Laying Patterns

The single row model shows two examples combination. Each combination is 2.4 m (7.87”) long and 180 mm (7 1/16”) high. This model can be used for installing the last row of modules or where other models cannot be used.

**NUMBER OF BLOCKS REQUIRED**

<table>
<thead>
<tr>
<th>RAFFINATO</th>
<th>MODULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 % of the surface - Raffinato 90 mm</td>
<td>6</td>
</tr>
<tr>
<td>50 % of the surface - Raffinato 180 mm</td>
<td>3</td>
</tr>
</tbody>
</table>
The 3-row model is 2.4 m (7.87') long and 540 mm (21\(\frac{1}{4}\)') high. This model allows for a graded area at every 540 mm (21\(\frac{1}{4}\)'), which corresponds to the recommended spacing between the layers of geogrid in a Raffinato wall. This model is recommended when using geogrid.

<table>
<thead>
<tr>
<th>NUMBER OF BLOCKS REQUIRED</th>
<th>MODULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAFFINATO</td>
<td>A</td>
</tr>
<tr>
<td>67 % of the surface</td>
<td>- Raffinato 90 mm 24</td>
</tr>
<tr>
<td>33 % of the surface</td>
<td>- Raffinato 180 mm 6</td>
</tr>
</tbody>
</table>
4-Row Pattern | Laying Patterns

The 4-row model shows two combination examples. This combination is 2.4 m (7.87') long and 720 mm (28 7/8") high. This model should only be used where geogrid is not required.

NUMBER OF BLOCKS REQUIRED

<table>
<thead>
<tr>
<th>RAFFINATO</th>
<th>MODULE</th>
</tr>
</thead>
<tbody>
<tr>
<td>67 % of the surface - Raffinato 90 mm</td>
<td>32</td>
</tr>
<tr>
<td>33 % of the surface - Raffinato 180 mm</td>
<td>8</td>
</tr>
</tbody>
</table>
INSTALLATION GUIDE
FREESTANDING WALLS - RAFFINATO 90 mm & 180 mm

RAFFINATO 90 mm & 180 mm

A. TECHO-BLOC CAP UNIT SECURED TO UNIT BELOW WITH CONCRETE ADHESIVE
B. RAFFINATO 90 mm AND 180 mm DOUBLE-SIDED WALL UNITS SECURE EACH ROW WITH CONCRETE ADHESIVE
C. CONNECTOR
D. EMBEDMENT DEPTH, 6” (150 mm) MIN.
E. 29 7/16” (750 mm) MAX.
F. GEOTEXTILE
G. COMPACTED GRANULAR LEVELING PAD, 6” (150 mm) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

GENERAL NOTES

1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.
4. Cavities, grooves and connectors are not illustrated to avoid overloading the image.

90° CORNER OF A DOUBLE-SIDED WALL

DOUBLE-SIDED WALL RADIUS

It is the user’s responsibility to verify for the quantity of materials required.

DOUBLE-SIDED WALL - END OF A STRAIGHT WALL
INSTALLATION GUIDE
PILLARS - RAFFINATO 90 mm & 180 mm

A. STONEDGE COLLECTION PILLAR CAP UNIT, SECURE TO UNITS BELOW WITH A CONCRETE ADHESIVE
B. RAFFINATO 90 mm PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. EMBEDMENT DEPTH: 150 mm (6") MIN.
D. 1080 mm (42 1/4"), MAXIMUM HEIGHT
E. GEOTEXTILE
F. COMPACTED GRANULAR BASE 150 mm (6") THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

A. STONEDGE COLLECTION PILLAR CAP UNIT, SECURE TO UNITS BELOW WITH A CONCRETE ADHESIVE
B. RAFFINATO 180 mm PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. EMBEDMENT DEPTH: 150 mm (6") MIN.
D. 1080 mm (42 1/4"), MAXIMUM HEIGHT
E. GEOTEXTILE
F. COMPACTED GRANULAR BASE 150 mm (6") THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
RAFFINATO 90 mm & 180 mm

**OPTION A**

A. STONE EDGE COLLECTION PILLAR CAP UNIT, SECURE TO UNITS BELOW WITH A CONCRETE ADHESIVE

B. RAFFINATO 90 mm PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE

C. RAFFINATO 180 mm PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE

D. EMBEDMENT DEPTH: 150 mm (6") MIN.

E. 1 080 mm (42 1/2"), MAXIMUM HEIGHT

F. GEOTEXTILE

G. COMPACTED GRANULAR BASE 150 mm (6") THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

**OPTION B**

A. STONE EDGE COLLECTION PILLAR CAP UNIT, SECURE TO UNITS BELOW WITH A CONCRETE ADHESIVE

B. RAFFINATO 90 mm PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE

C. RAFFINATO 180 mm PILLAR UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE

D. EMBEDMENT DEPTH: 150 mm (6") MIN.

E. 1 080 mm (42 1/2"), MAXIMUM HEIGHT

F. GEOTEXTILE

G. COMPACTED GRANULAR BASE 150 mm (6") THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

**STEPS**

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE
GRILL ISLAND - RAFFINATO SMOOTH 90 mm & 180 mm

A. YORK COUNTER TOP 24" x 36" x 2 1/4" (CUT ON FIELD AS REQUIRED)
B. RAFFINATO 90 MM UNIT (A) – LONG FACE EXPOSED (SHOWN WITH UPPERCASE LETTER)
C. RAFFINATO 180 MM UNIT (A) – LONG FACE EXPOSED (SHOWN WITH UPPERCASE LETTER)
D. RAFFINATO 180 MM UNIT (A) – SHORT FACE EXPOSED (SHOWN WITH LOWERCASE LETTER)
E. RAFFINATO 90 MM PILLAR UNIT
F. RAFFINATO 180 MM PILLAR UNIT
G. RAFFINATO UNIT CUT ON FIELD AS REQUIRED
H. CAST IN PLACE CONCRETE SLAB 4350 PSI (30 MPA), 5" (125 MM) THICK
I. 4X4-4/4 (102X102-MW25.8XMW25.8) WELDED WIRE MESH AND/OR REBAR AS PER SITE CONDITIONS
J. 12" (300 MM) DIA. CONCRETE PILLAR, AS PER LOCAL CODE
K. 3/4" (20 MM) CLEAN STONE
L. 6" (150 MM) THICK MIN. AS PER SITE CONDITIONS
M. NATURAL SOIL OR COMPACTED BACKFILL

QUANTITY OF MATERIALS REQUIRED
- York Counter top 24" x 36" x 2 1/4": 4
- Raffinato 90 mm wall unit: 48 A
- Raffinato 180 mm wall unit: 22 A
- Raffinato 90 mm pillar unit: 16
- Raffinato 180 mm pillar unit: 16

NOTE: Appliances and utilities may vary for each project and are not shown on this drawing. This drawing is shown for inspiration only and surplus or shortage of materials may result. It is the user’s responsibility to verify for the quantity of materials required. Secure the blocks using a heat resistant concrete adhesive. The installer must ensure that the installation and use of the grill island comply with local regulations and code requirements. Concrete pillars extending to frost line may be required as per local code. Check your local building code before installing.
A. YORK COUNTER TOP 24" x 36" x 2 1/4" (CUT ON FIELD AS REQUIRED)
B. RAFFINATO 90 MM UNIT (A) – LONG FACE EXPOSED (SHOWN WITH UPPERCASE LETTER)
C. RAFFINATO 180 MM UNIT (A) – LONG FACE EXPOSED (SHOWN WITH UPPERCASE LETTER)
D. RAFFINATO 180 MM UNIT (A) – SHORT FACE EXPOSED (SHOWN WITH LOWERCASE LETTER)
E. RAFFINATO 90 MM PILLAR UNIT
F. RAFFINATO 180 MM PILLAR UNIT
G. RAFFINATO UNIT CUT ON FIELD AS REQUIRED
H. CAST IN PLACE CONCRETE SLAB 4350 PSI (30 MPA), 5" (125 MM) THICK
I. 4X4-4/4 (102X102-MW25.8XMW25.8) WELDED WIRE MESH AND/OR REBAR AS PER SITE CONDITIONS
J. 12" (300 MM) DIA. CONCRETE PILLAR, AS PER LOCAL CODE
K. 3/4" (20 MM) CLEAN STONE
L. GEOTEXTILE
M. NATURAL SOIL OR COMPACTED BACKFILL

NOTE: Appliances and utilities may vary for each project and are not shown on this drawing. This drawing is shown for inspiration only and surplus or shortage of materials may result. It is the user’s responsibility to verify for the quantity of materials required. Secure the blocks using a heat resistant concrete adhesive. The installer must ensure that the installation and use of the grill island comply with local regulations and code requirements. Concrete pillars extending to frost line may be required as per local code. Check your local building code before installing.
**INSTALLATION GUIDE**

**FREESTANDING WALLS - RÖCKA**

**RÖCKA**

A. RÖCKA DOUBLE-SIDED WALL UNITS SECURE EACH ROW WITH CONCRETE ADHESIVE

B. EMBEDMENT DEPTH, 6” (150 mm) MIN.

C. 24” (612 mm) MAX.

D. GEOTEXTILE

E. COMPACTED GRANULAR LEVELING PAD, 6” (150 mm) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

---

**90° CORNER OF A DOUBLE-SIDED WALL**

1. Alternate odd and even rows

2. Stagger vertical joints by at least ¼ of the length of the block.

3. Glue all modules at each row with a concrete adhesive.

4. It is possible to alternate the blocks (A, B or C) in the same row to create different patterns.

---

**DOUBLE-SIDED WALL - END OF A STRAIGHT WALL**

* It is possible to alternate the blocks (A, B or C) in the same row to create different patterns. However, a minimum distance of ¼ the length of the block is required between the vertical joints.
INSTALLATION GUIDE
GRILL ISLAND - RÖCKA

A. YORK COUNTER TOP 24” X 36” X 2 1/4” (CUT ON FIELD AS REQUIRED)
B. RÖCKA WALL UNIT (A, B OR C)
C. RÖCKA WALL UNIT CUT ON FIELD AS REQUIRED
D. CAST IN PLACE CONCRETE SLAB 4350 PSI (30 MPA), 5” (125 MM) THICK
E. 4X4-4/4 (102X102-MW25.8XMW25.8) WELDED WIRE MESH AND/OR REBAR AS PER SITE CONDITIONS
F. 12” (300 MM) DIA. CONCRETE PILLAR, AS PER LOCAL CODE
G. 3/4” (20 MM) CLEAN STONE
H. 6” (150 MM) THICK MIN. AS PER SITE CONDITIONS
I. GEOTEXTILE
J. NATURAL SOIL OR COMPACTED BACKFILL

QUANTITY OF MATERIALS REQUIRED
- York Counter top 24” X 36” X 2 1/4”: 4
- Röcka wall unit: 22 A, 20 B, 12 C

NOTE: Appliances and utilities may vary for each project and are not shown on this drawing. This drawing is shown for inspiration only and surplus or shortage of materials may result. It is the user’s responsibility to verify for the quantity of materials required. Secure the blocks using a heat resistant concrete adhesive. The installer must ensure that the installation and use of the grill island comply with local regulations and code requirements. Concrete pillars extending to frost line may be required as per local code. Check your local building code before installing.
1. The information contained in the design charts is supplied for information purposes only and as such should only be used for preliminary designs.
2. The height (H) of the wall is the total height from the leveling pad to the top of the wall not including the thickness of the cap.
3. Soil parameters: reinforced soil ($\phi = 35^\circ, \gamma = 22 \text{ kN/m}^3$); retained soil ($\phi = 26^\circ, \gamma = 20 \text{ kN/m}^3$); foundation soil ($\phi = 26^\circ, \gamma = 20 \text{ kN/m}^3$)
4. A qualified engineer should be consulted for the final design to be used for construction.
5. The foundation soil must be able to support the wall system. The bearing capacity of the foundation soil, settlement, and global stability must be verified and validated by a qualified geotechnical engineer.
6. The seismic analysis is not included.
7. The charts assume that the walls are constructed in accordance with Techo-Bloc specifications, good construction practice and an adequate drainage system.
8. The geogrid layout has been optimized to satisfy the design requirements of the NCMA’s Design Manual for Segmental Retaining Walls, 3rd Edition.
9. The charts do not apply to tiered walls.
10. The minimum burial depth must be 150 mm (6 in) or 10% of the exposed height, whichever is greater.
11. Engineering judgement should be used when interpolating between heights.
12. Techo-Bloc and its predecessors, successors, beneficiaries, employees, associates, administrators and insurers accepts no liability for the incorrect use of information contained in the design charts.
13. For further information, please contact our technical service department.
INSTALLATION GUIDE
FREESTANDING WALLS - SEMMA

SEMMA
A. TECHO-BLOC CAP UNIT SECURED TO UNIT BELOW WITH CONCRETE ADHESIVE
B. SEMMA DOUBLE-SIDED WALL UNIT SECURE EACH ROW WITH CONCRETE ADHESIVE
C. CONNECTOR
D. EMBEDMENT DEPTH, 6" (150 mm) MIN.
E. 29 7/8" (750 mm) MAX.
F. GEOTEXTILE
G. COMPACTED GRANULAR LEVELING PAD, 6" (150 mm) THICK MIN. THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

90° CORNER OF A DOUBLE-SIDED WALL

DOUBLE-SIDED WALL RADIUS

GENERAL NOTES
1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.
4. Cavities, grooves and connectors are not illustrated to avoid overloading the image.
INSTALLATION GUIDE
PILLARS - SEMMA

For all possible combinations of walls and caps, please refer to the correspondence table on 100.

STEPS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE
GRAVITY AND REINFORCED WALLS - SEMMA

GRAVITY WALL DETAIL

A. CAP FROM TECHO-BLOC
B. SEMMA BLOCK FROM TECHO-BLOC
C. WALL INCLINATION (7.6°)
D. EXPOSED HEIGHT
E. HDPE HORIZONTAL KEY
F. EMBEDMENT DEPTH
G. TOP SOIL
H. LOW PERMEABILITY SOIL
I. 3/4" (20 mm) CLEAN STONE, 12" (300 mm) THICK MIN.

REINFORCED WALL DETAIL

J. RETAINED SOIL
K. GEOTEXTILE
L. PERFORATED DRAIN
M. LEVELING PAD
N. FOUNDATION SOIL
O. GEOGRID
P. REINFORCED SOIL
Q. GEOGRID LENGTH
**INSTALLATION GUIDE**

**CAVITY INFILL - SKYSCRAPER**

### SKYSCRAPER TOP

**IN BETWEEN ADJACENT BLOCKS**

- Volume: 0.481 ft³ (0.0136 m³)

**CAVITY VOLUME**

- Volume: 0.283 ft³ (0.0080 m³)

**AGGREGATE UNIT INFILL QUANTITY**

- PER UNIT: ±1.53 ft³ (±0.043 m³)
- PER WALL AREA: ±147.91 lb (±66.65 kg)

**CAVITY INFILL - SKYSCRAPER**

<table>
<thead>
<tr>
<th>Aggregate Infill Quantity</th>
<th>Per Unit</th>
<th>Per Wall Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>±0.51 ft³ ft²</td>
<td>±0.016 m³/m²</td>
<td>±248 kg/m²</td>
</tr>
<tr>
<td>±49.37 lb/ft²</td>
<td>±1.56 m²/m²</td>
<td>±728.5 kg/m²</td>
</tr>
</tbody>
</table>

*Assumed aggregate unit weight of 96.8 lb/ft³ (1550 kg/m³)

### SKYSCRAPER MIDDLE

**IN BETWEEN ADJACENT BLOCKS**

- Volume: 0.740 ft³ (0.0209 m³)

**CAVITY TYPE 2 VOLUME**

- Volume: 0.328 ft³ (0.0093 m³)

**CAVITY TYPE 1 VOLUME**

- Volume: 0.313 ft³ (0.0089 m³)

**AGGREGATE UNIT INFILL QUANTITY**

- PER UNIT: ±2.76 ft³ (±0.078 m³)
- PER WALL AREA: ±167.17 lb (±120.9 kg)

**CAVITY INFILL - SKYSCRAPER**

<table>
<thead>
<tr>
<th>Aggregate Infill Quantity</th>
<th>Per Unit</th>
<th>Per Wall Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>±0.42 ft³ ft²</td>
<td>±0.018 m³/m²</td>
<td>±248 kg/m²</td>
</tr>
<tr>
<td>±89.06 lb/ft²</td>
<td>±0.15 m²/m²</td>
<td>±728.5 kg/m²</td>
</tr>
</tbody>
</table>

*Assumed aggregate unit weight of 96.8 lb/ft³ (1550 kg/m³)

### SKYSCRAPER BASE

**IN BETWEEN ADJACENT BLOCKS**

- Volume: 1.179 ft³ (0.0334 m³)

**CAVITY TYPE 2 VOLUME**

- Volume: 0.506 ft³ (0.0143 m³)

**CAVITY TYPE 1 VOLUME**

- Volume: 0.475 ft³ (0.0135 m³)

**AGGREGATE UNIT INFILL QUANTITY**

<table>
<thead>
<tr>
<th>Aggregate Infill Quantity</th>
<th>Per Unit</th>
<th>Per Wall Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>±0.34 ft³ ft²</td>
<td>±0.0098 m³/m²</td>
<td>±248 kg/m²</td>
</tr>
<tr>
<td>±151.01 lb/ft²</td>
<td>±0.47 m³/m²</td>
<td>±728.5 kg/m²</td>
</tr>
</tbody>
</table>

*Assumed aggregate unit weight of 96.8 lb/ft³ (1550 kg/m³)

**VOLUME OF CAVITY FOR EXTENDER**

- (Fill with clean stone when extender is not used)
INSTALLATION GUIDE
CAVITY INFILL - SKYSCRAPER

SKYSCRAPER BASE + EXTENDER(S)

Aggregate Infill Quantity
(INCLUDING CAVITY FOR EXTENDER)

<table>
<thead>
<tr>
<th># OF EXTENDERS</th>
<th>DEPTH (D)</th>
<th>PER UNIT</th>
<th>PER WALL AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(INCL. CAVITY FOR EXTENDER)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>72 3/8&quot;</td>
<td>±7.35 ft³</td>
<td>±711 lb</td>
</tr>
<tr>
<td></td>
<td>96 3/4&quot;</td>
<td>±10.02 ft³</td>
<td>±970 lb</td>
</tr>
<tr>
<td>3</td>
<td>121 1/8&quot;</td>
<td>±12.69 ft³</td>
<td>±1228 lb</td>
</tr>
<tr>
<td>4</td>
<td>145 1/2&quot;</td>
<td>±15.36 ft³</td>
<td>±1487 lb</td>
</tr>
<tr>
<td>5</td>
<td>169 7/8&quot;</td>
<td>±18.03 ft³</td>
<td>±1745 lb</td>
</tr>
<tr>
<td>6</td>
<td>194 1/4&quot;</td>
<td>±20.70 ft³</td>
<td>±2004 lb</td>
</tr>
</tbody>
</table>

* Assumed aggregate unit weight of 96.8 lb/ft³ (1550 kg/m³)

VOLUME OF CAVITY FOR EXTENDER = 0.345 ft³ (0.0098 m³)

IN BETWEEN ADJACENT BASE BLOCKS VOLUME = 1.179 ft³ (0.0334 m³)

IN BETWEEN ADJACENT EXTENDERS UNIT VOLUME = 1.335 ft³ (0.0378 m³)

CAVITY TYPE 2 VOLUME = 0.506 ft³ (0.0143 m³)

CAVITY TYPE 1 VOLUME = 0.475 ft³ (0.0135 m³)
A. CAP FROM TECHO-BLOC
B. SKYSCRAPER TOP UNIT FROM TECHO-BLOC
C. SKYSCRAPER MIDDLE UNIT FROM TECHO-BLOC
D. SKYSCRAPER BASE UNIT FROM TECHO-BLOC
E. SKYSCRAPER EXTENDER UNIT FROM TECHO-BLOC
F. WALL INCLINATION:
   - 0.8" (NEAR VERTICAL)
   - 12.7" (INCLINED)
G. EXPOSED HEIGHT
H. PRECAST CONCRETE "U" CONNECTOR
I. PRECAST CONCRETE "Z" CONNECTOR
J. EMBEDMENT DEPTH
K. TOP SOIL
L. LOW PERMEABILITY SOIL
M. 3/4" (20 mm) CLEAN STONE, 12" (300 mm) THICK MIN
N. RETAINED SOIL
O. GEOTEXTILE
P. PERFORATED DRAIN
Q. LEVELING PAD
R. FOUNDATION SOIL
1. The information contained in the design charts is supplied for information purposes only and as such should only be used for preliminary designs.

2. The height (H) of the wall is the total height from the leveling pad to the top of the wall not including the thickness of the cap.

3. Soil parameters: reinforced soil ($\phi = 35^\circ$, $\gamma = 22$ kN/m$^3$); retained soil ($\phi = 26^\circ$, $\gamma = 20$ kN/m$^3$); foundation soil ($\phi = 26^\circ$, $\gamma = 20$ kN/m$^3$)

4. A qualified engineer should be consulted for the final design to be used for construction.

5. The foundation soil must be able to support the wall system. The bearing capacity of the foundation soil, settlement, and global stability must be verified and validated by a qualified geotechnical engineer.

6. The seismic analysis is not included.

7. The design charts do not apply to tiered walls.

8. The charts assume that the walls are constructed in accordance with Techo-Bloc specifications, good construction practice and an adequate drainage system.

9. The geogrid layout has been optimized to satisfy the design requirements of the NCMA’s Design Manual for Segmental Retaining Walls, 3rd Edition.

10. The minimum burial depth must be 150 mm (6 in) or 10% of the exposed height, whichever is greater.

11. Engineering judgement should be used when interpolating between heights.

12. Techo-Bloc and its predecessors, successors, beneficiaries, employees, associates, administrators and insurers accepts no liability for the incorrect use of information contained in the design charts.

13. For further information, please contact our technical service department.
INSTALLATION GUIDE
GRAVITY AND REINFORCED WALLS - SUPREMA

GRAVITY WALL DETAIL

A. CAP FROM TECHO-BLOC
B. SUPREMA BLOCK FROM TECHO-BLOC
C. WALL INCLINATION (4.5°)
D. EXPOSED HEIGHT
E. HDPE HORIZONTAL KEY
F. EMBEDMENT DEPTH
G. TOP SOIL
H. LOW PERMEABILITY SOIL
I. 3/4" (20 mm) CLEAN STONE, 12" (300 mm) THICK MIN.

REINFORCED WALL DETAIL

J. RETAINED SOIL
K. GEOTEXTILE
L. PERFORATED DRAIN
M. LEVELING PAD
N. FOUNDATION SOIL
O. GEOGRID
P. REINFORCED SOIL
Q. GEOGRID LENGTH

STEPS - SUPREMA

For all possible combinations of walls and caps, please refer to the correspondence table on 100.
INSTALLATION GUIDE

FREESTANDING WALLS - TRAVERSTINA RAW

TRAVERTINA RAW
A. TECHO-BLOC CAP UNIT, SECURED TO UNIT BELOW WITH CONCRETE ADHESIVE
B. TRAVERSTINA RAW DOUBLE-SIDED WALL UNIT
   SECURE EACH ROW WITH CONCRETE ADHESIVE
C. CONNECTOR
D. EMBEDMENT DEPTH, 6" (150 mm) MIN.
E. 24" (612 mm) MAX.
F. GEOTEXTILE
G. COMPACTED GRANULAR LEVELING PAD, 6" (150 mm) THICK MIN.
   THICKNESS ACCORDING TO PROJECT SPECIFIC CONDITIONS

90° CORNER OF A DOUBLE-SIDED WALL

DOUBLE-SIDED WALL - END OF A STRAIGHT WALL

GENERAL NOTES
1. Alternate odd and even rows.
2. Stagger joints from one row to the next.
3. Glue all modules at each row with a concrete adhesive.
INSTALLATION GUIDE
PILLARS - TRAVERTINA RAW

A. PILLAR CAP UNIT
   (SECURE WITH CONCRETE ADHESIVE)
B. TRAVERTINA RAW PILLAR UNIT
   SECURE EACH ROW WITH CONCRETE ADHESIVE
C. EMBEDMENT 6” (150 mm) MIN.
D. 36” (917 mm), HEIGHT PER PALLET
   42” (1067 mm), MAXIMUM HEIGHT
E. GEOTEXTILE
F. COMPACTED GRANULAR BASE 6” (150 mm)
   THICK MIN. THICKNESS ACCORDING TO
   PROJECT SPECIFIC CONDITIONS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.

STEPS

For all possible combinations of walls and caps, please refer to the correspondence table on 100.